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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,820	03/29/2001	John Sabat JR.	3176.1001-001	6213
34206	7590	12/23/2005		
			EXAMINER	
			PRIETO, BEATRIZ	
			ART UNIT	PAPER NUMBER
			2142	

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/821,820	SABAT ET AL.	
	Examiner	Art Unit	
	Prieto B.	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 8/31/05.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,2,5-11 and 14 is/are rejected.
- 7) Claim(s) 3,4,12 and 13 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 29 March 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. This communication is in response to Petition to Revive/Amendment filed 8/31/05, restoring pending application's status. Claims 1-14 remain pending.
2. Amendment to the abstract of the disclosure enclosed in the above-mentioned amendment, complies with noted requirements, obviating previous objection, which is thereby withdrawn.
3. Amendment to the specification enclosed in the above-mentioned amendment, corrects previously noted informality obviating respective objection and is thereby, withdrawn.
4. Amendments to claims 1, 7 and 10 to correct previously noted lack of antecedent basis obviates this deficiency, respective objection is thereby withdrawn.
5. Claims 3 and 12 (4 and 13 by virtue of dependency) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In this case, it is not clear where in the disclosure a written description describing claim limitation, "accepting requests for distribution service from multiple tenant service providers, the requests specifying a desired air interface for wireless communication from among a plurality of available air interfaces, and an indication of which portions in the coverage area the particular air interface is to be supported" found.
7. Regarding the above-mentioned 112-1st paragraph rejection, Applicant has pointed out (p. 12-1 of remarks) where is this limitation described in the specification, directing office's attention to the following portion, which have been reviewed.

[0032] An operator controlled, common or open access Network Management System 60 provides remote monitoring and control of the open access network 10 by the network operator. The open access Network Management System 60 also allows for the network operator to pass selected control or status information concerning the open access network 10 to or from the individual wireless carriers or tenants. The present invention relates in particular to the manner in which the open access NMS 60 communicates with tenant NMSs 62a, 62b. By "tenant" herein, it is meant to refer to the wireless carrier, Wireless Service Provider (WSP), or other business entity that desires to provide wireless service to end customers using the open access system 10.

This portion fails to discuss or describe claimed limitation:

"accepting requests for distribution services from multiple tenant service providers, the requests specifying a desired air interface for wireless communication from among a plurality of available air interfaces, and an indication of which portions in the coverage are the particular air interface is to be supported."

[0033] The open access system 10 supports essentially any wireless protocol to be an open access platform. In one configuration, open access system 10 supports the multiple 800/1900 MHz and/or WCS/ISM/MMDS/U-NII wireless service providers, and wireless data providers who require last mile access to their targeted customers, all at the same time.

This portion fails to discuss or describe claimed limitation:

"accepting requests for distribution services from multiple tenant service providers, the requests specifying a desired air interface for wireless communication from among a plurality of available air interfaces, and an indication of which portions in the coverage are the particular air interface is to be supported."

[0034] In a preferred configuration, the open access network consists of radio access nodes (RAN) 50 distributed to achieve the desired RF signal presence and a hub 35 and high speed data link 40, which interconnects the base station RF signals with the RANs 50.

[0035] The distributed architecture is comprised of multi-protocol, frequency-independent radio access nodes 50. In the preferred embodiment at the present time, each RAN 50 supports from 1 to 8 tenants of various protocols and frequencies. It should be understood that other configurations could support a smaller or greater number of tenants per RAN 50. Within each RAN 50, the wireless service provider "tenants" have typically leased space from the operator of the open access system 10, so that the operators can install corresponding, appropriate individual radio elements in a RAN slice 52. Each HUB 35 can scale to support one to three sectors each for multiple base stations 20. It should be understood that base stations with a greater number of sectors 20 may also be supported.

These portions fail to discuss or describe claimed limitation:

"accepting requests for distribution services from multiple tenant service providers, the requests specifying a desired air interface for wireless communication from among a plurality of available air interfaces, and an indication of which portions in the coverage are the particular air interface is to be supported."

[0036] RANs 50 are interconnected via fiber links 40 to centrally located HUB sites 30 and associated base stations 20. RANs 50 provide a wide area distribution network that is logically a "horizontal radio tower" with access provided to a single "tenant" or shared amongst multiple tenants (wireless service providers). The generic architecture supports scaling from a

single operator to supporting up to multiple operators across the multiple frequency bands per shelf. Multiple slices may be stacked to serve additional tenants, as needed.

[0037] Open access network elements such as the HUBs 35 and RANs 50 incorporate a System Network Management Protocol (SNMP) communication scheme to facilitate integration with the host operator's open access network management system (NMS) 60. The open access NMS is in turn connected to tenant-specific NMSs 62a, 62b through convenient data networking equipment such as wide area data networks (WANs) 65. This architecture allows easy and complete communication across the open access system 10 with a high level of control and visibility. The preferred manner in which the open access NMS 60 coordinates requests from tenant NMSs 62a, 62b to communicate SNMP messages with the open access system elements is described below.

This portion fails to discuss or describe claimed limitation:

"accepting requests for distribution services from multiple tenant service providers, the requests specifying a desired air interface for wireless communication from among a plurality of available air interfaces, and an indication of which portions in the coverage are the particular air interface is to be supported."

[0047] The hub interconnect in FIG. 5 then selects RAN 50 simulcast groupings for each sector based upon the desired groupings desired for each tenant. This permits for equalization of the radio frequency link budgets in each RAN 50 group. The open access product allows a tenant to customize the RAN 50 RF parameter settings to control the radio link environment, such as signal attenuation, gain, and other methods for strong signal mitigation.

This portion fails to discuss or describe claimed limitation:

"accepting requests for distribution services from multiple tenant service providers, the requests specifying a desired air interface for wireless communication from among a plurality of available air interfaces, and an indication of which portions in the coverage are the particular air interface is to be supported."

[0048] In sector configuration of the system, the Hub/RAN ratio is configurable from 1 to 8 RANs per BTS sector. The RANs 50 is remote configurable through the open access operator's NMS 60, to support what is commonly referred to as sector reallocation. The sector allocation is defined by the hosted wireless service provider's traffic loading analysis and controlled by the inputs from the specific tenant's NMS 62 via the wide area network 65.

[0049] What is important to note here in the context of the present invention is that any given WSP or tenant may require access to only certain ones of the RAN slices at particular RANs 50, depending upon the simulcast configuration presently in place, and depending upon the types and amount of access that the individual tenant has requested from the operator of the open access system.

This portion fails to discuss or describe claimed limitation:

"accepting requests for distribution services from multiple tenant service providers, the requests specifying a desired air interface for wireless communication from among a plurality of available air interfaces, and an indication of which portions in the coverage are the particular air interface is to be supported."

8. Accordingly, it is respectfully noted that this rejected is sustain because none of the cited portion allegedly supporting discuss claimed limitation:

“accepting requests for distribution services from multiple tenant service providers, the requests specifying a desired air interface for wireless communication from among a plurality of available air interfaces, and an indication of which portions in the coverage are the particular air interface is to be supported.”

Claim Rejection under 35 U.S.C. 102

9. Quotation of the appropriate paragraphs of 35 USC 102 that form the basis for the rejections under this section made in this Office action may be found in previous office action.
10. Claims 1-2, 5-11 and 14 rejected under 35 U.S.C. 102(b) as being anticipated by Hamilton-Piercy et. al. US 5,802,173 (Hamilton hereafter).

Regarding claim 1, Hamilton teaches

a first tenant base station (207) at a “first tenant network management” system (OCMS) operated by a “first wireless communication service” provider (col 3/lines 51-54 , col 8/lines 53-67 and col 11/lines 30-35);

a second tenant base station (208) at a “second tenant network management “ system (CCMS) operated by a “second wireless communication service” provider (col 3/lines 51-54, col 8/lines 53-67 and col 11/lines 30-35), wherein the second tenant and first tenant are collocated (col 7/lines 13-14, col 8/lines 53-67);

frequency translator modules (150/152 of Fig. 4) “transport medium” for converting radio frequency signal transmitted by the first and second base stations relating thereto to a fiber optic link “common transport medium” (col 15/lines 62-col 16/line 2, 42-47, and reference claims 2d and 4);

first and second base station converts received and transmitted RF signal containing, voice and control data in a format suitable for transmission on an electrical or optical transmission facility into or from radio frequency (RF) signals (col 3/lines 9-20);

a plurality of remotely located antennas comprising antenna system (18) “radio access nodes”, each radio access nodes associated with a predetermined sub-area of a total system coverage area (col 6/lines 55-col 7/line 2, and col 15/lines 26-30, 44-54);

each radio access node coupled to receive signal from the common transport medium (col 13/lines 19-23);

each radio access node containing a “first and second slice module” blocks associated with the respective first and second tenant base stations (col 25/lines 67-col 27/line 16 and reference claim 2c);

hub site “common network management” forwards control messages conveyed from the OCMS system via MTSO (200) to the base station, said RF control signals comprising a pilot carrier to intended slice modules (152/153) associated with respective base station for controlling a predetermined frequency block, i.e. slice module (col 17/lines 55-col 19/line 11).

Regarding claim 2, limit access by tenants to status and control information associated with tenant’s respective radio access nodes (col 16/lines 5-41 and col 16/lines 54-col 17/line 14).

Regarding claims 5-6, storage medium ‘database’ for storing information from request from the common network management, wherein messages from the first or second network management system for the radio access not responds from stored information (col 19/lines 61-col 20/line 3).

Regarding claim 7, this claim comprises limitation substantially the same as claim 1, same rationale of rejection is applicable, further includes a common network management system installed at a central location for “intercepting control message traffic” data from and to said network management systems and forwarding “routing” said data to a “common control message handler” data processing entity (i.e. hub site “common network management” forwards control messages conveyed from the OCMS system via MTSO (200) to the base station col 17/lines 55-col 19/line 11), signals intended for a mobile 206 are routed by the MTSO to an RBS 205 that can adequately serve this mobile (col 11/lines 1-19).

Regarding claim 8, a shared communication link “transport medium” over which control messages are transmitted “routed” to the radio access nodes (i.e. fiber optic link “common transport medium” see col 15/lines 62-col 16/line 2, 42-47, and reference claims 2d and 4).

Regarding claim 9, sending a “generic status” query to the radio access nodes; storing, in a storage means the responses; and in response to “control” message originating from one of the tenant network management systems, obtaining said stored information (col 19/lines 61-col 20/line 3).

Regarding claim 10, this system claim is substantially the same as claim 1, same rationale of rejection is applicable.

Regarding claims 11 and 14, these claims are substantially the same as claims 2 and 5, respectively, same rationale of rejection is applicable.

Citation of Pertinent Art:

11. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Copies of Non-Patent Literature documents cited will be provided as set forth in MPEP§ 707.05(a):

US 2002/0023160

Garrett et. al. discloses a method which facilitates multiple services or service providers to share the facilities of an access network infrastructure providing physical connectivity to the subscribers. Interconnection points are not required for each service network at every regional access network site. Enables the network addresses which ultimately determines the service network utilized by the particular network access device, to be allocated and reassigned dynamically.

High-Speed Point-to-Point and Multiple Broadcast Services Delivered over a WDM Passive Optical Network, P. P. Iannone, *Member, IEEE*, and K. C. Reichmann, *Member, IEEE*, and N. J. Frigo, *Member, IEEE*, IEEE PHOTONICS TECHNOLOGY LETTERS, VOL. 10, NO. 9, SEPTEMBER 1998, p. 1328-1330.

Iannone et. al. discloses where networks of a given type (broadcast, switched) generally have the most difficulty delivering services of the opposite type. We have shown that an intrinsically switched physical infrastructure (WDM PON) can efficiently deliver multiple broadcast broad-band services with minimal cross-service or dispersion penalties, while using conventional optical components and subsystems. The throughput of our preliminary demonstration (4 GHz) is at least comparable to that associated with usual hybrid-fiber-coax and switched-digital-video networks, and will be improved in the near future. The ability to *share a common broad-band infrastructure among multiple service types and service providers* should lower the economic barriers to entry for network operators, while enabling unforeseen future broad-band services

Response to Arguments

12. Regarding claims 1-2, 5-11 and 14 rejected under 102 as being anticipated by Hamilton, it is argued (remarks p. 13), there is not explanation as to why [as best understood] by applicant, the “optically connected microcell system” (OCMS) and the “coaxially connected microcell system (CCMS) are a “first tenant network management system systems” and “a second tenant network management systems”, respectively, as recited on claim 1.

In response to the above-mentioned argument, applicant’s interpretation of the applied prior art has been fully considered. However, applicant is respectfully reminded that Office personnel must rely on the applicant’s disclosure to properly determine the meaning of the claims. *Markman v. Westview Instruments*, 52 F.3d 967, 980, 34 USPQ2d 1321, 1330 (Fed. Cir.) (en banc), aff ’d, U.S., 116 S. Ct. 1384 (1996).

Claim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art. *Sunrace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298, 67 USPQ2d 1132, 1136 (Fed. Cir. 2003)(“In the absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art.”) However, an applicant is entitled to be his or her own lexicographer and may rebut the presumption that claim terms are to be given their ordinary and customary meaning by clearly setting forth a definition of the term that is different from its ordinary and customary meaning. See *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) >and *Vitronics Corp. v. Conceptronic Inc.*, 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996)<.

Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim. *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999) (meaning of words used in a claim is not construed in a “lexicographic vacuum, but in the context of the specification and drawings.”). Any special meaning assigned to a term “must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention.” *Multiform Desiccants Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1477, 45 USPQ2d 1429, 1432 (Fed. Cir. 1998). See also MPEP § 2111.01.

In this case, claimed terms “first tenant network management system systems” and “a second tenant network management systems”, respectively, are systems.

13. Regarding claims 1-2, 5-11 and 14 rejected under 102 as being anticipated by Hamilton, it is argued (remarks p. 14), that the applied prior art does not teach where said systems are operated by a respective “wireless communication service provider”.

In response to the above-mentioned argument, the applied prior art teaches, (i) Hamilton discloses as prior art a base station at a system is operated by a service provider. Specifically,

This invention relates to the interface between a telephone network and wireless mobile telephone units in a radiotelephony system and more particularly to *equipment for the implementation of a mobile communications service utilizing a fixed distribution network incorporating a layer between base stations and associated antennas, the layer incorporating two way optical fibre and/or coaxial cable signal transport facilities*. The development and commercial success of *mobile radiotelephony services through the existing cellular system*, particularly in urban centres, is requiring *mobile service providers to increase substantially the traffic carrying capability of their networks and at the same time address the needs of the users by providing a portable grade of service* (col 1/lines 4-23).

Hamilton further teaches first and second tenant base station at a “first and second tenant network management” system operated by a first and second wireless communication service provider. Specifically,

a cellular service provider's ability to locate, construct and operate additional conventional radio base stations (RBS) sites becomes increasingly difficult and costly, where the site access for maintenance purposes, which may be required at any time, also becomes a problem (col 3/lines 51-54). The Optically Connected Microcell System (OCMS) including a multiplicity of Optically Connected Microcell Base Stations (OCMBS) may be connected to the *optical fibre cable facilities* throughout a community or urban centre to *provide radiotelephony services*, with the effect of providing virtual radio base stations at multiple sites, even though the radio base stations themselves may be concentrated in only a few, or even a single site (col 8/lines 53-67). The *coaxial cable facility is operated by a service operator controlling the cable facility* (col 9/lines 1-20).

14. Applicant's arguments have been fully considered but not rendered persuasive.

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (571) 272-3902. The Examiner can normally be reached on Monday-Friday from 6:00 to 3:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Andrew T. Caldwell can be reached at (571) 272-3868. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR, for unpublished application Private PAIR only (see <http://pair-direct.uspto.gov> or the Electronic Business Center at 866-217-9197 (toll-free)).

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Alexandria, VA 22314

Faxed to the Central Fax Office:

(571) 273-8300 (New Central Fax No.)

Or Telephone:

(571) 272-2100 for TC 2100 Customer Service Office.

B. Prieto
Primary Examiner
December 13, 2005

Beatriz Prieto
BEATRIZ PRIETO
PRIMARY EXAMINER